

AMENDMENT

U.S. PATENT APPLICATION NO. 10/814,131

RESPONSE TO OFFICE ACTION MAILED JUNE 6, 2005

REMARKS

Claim 2 has been canceled and its subject matter incorporated into claim 1. Further support for this amendment can be found in the specification on at least at page 2, lines 15 – 17 and in FIGS. 1, 2, and 7. Claims 5, 13, and 19 have been amended to change the dependency of the claims from the canceled claim to claim 1. Claims 10 and 11 were amended to eliminate reference numbers, and claim 20 was amended to correct a typographical error. No new matter has been added.

As a result of the above amendments, claims 1 and 3 – 21 are present in the subject application.

In the Office Action dated June 06, 2005, the Examiner objected to the disclosure; objected to claim 19; rejected claims 1 – 5, 13, and 19 – 21 under 35 U.S.C. §102(b); and rejected claims 14 – 15 under 35 U.S.C 103(a). In addition, the Examiner objected to claims 6 – 12 and 16 – 18 as being dependent on rejected base claims, but indicated that the claims would be allowable if rewritten in independent form including all the limitations of the base claim. Favorable reconsideration of the application and allowance of all of the pending claims are respectfully requested in view of the above amendments and the following remarks.

Initially, the Examiner objected to the specification abstract because merits of the invention were listed therein. The abstract has been amended to address the issues raised by the Examiner. In addition, the Examiner objected to the specification because of minor informalities, including the absence of section headings in compliance with 37 CFR 1.77(b). In the Preliminary Amendment filed on December 6, 2004, amendments to the specification included the addition of section headings in compliance with 37 CFR 1.77(b). A copy of the Preliminary Amendment is attached. Finally, claim 19 was objected to because it contained a typographical error. The claim has been amended to address the issue raised by the Examiner. In view of the above, withdrawal of the objections to the specification and to claim 19 is respectfully requested.

Claims 1 – 5, 13, and 19 – 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,902,000 to Forsyth et al. The subject matter of claim 2 has been incorporated into claim 1. This rejection is respectfully traversed because the reference does not

AMENDMENT

U.S. PATENT APPLICATION NO. 10/814,131

RESPONSE TO OFFICE ACTION MAILED JUNE 6, 2005

does not disclose, teach, or suggest the features of amended claim 1 of a coaxial line comprising *struts* intersecting the outer conductor, wherein the struts include conduits in fluid communication with the inner conductor. Forsythe et al. discloses an end terminal for superconductor power systems. Specifically, it discloses a three-part system including three cables **R** each connected to end terminals **T**. Each terminal **T** includes a bushing **B** connected to the end of the terminal. It is the position of the Examiner that the Forsyth et al. bushing **B** is equivalent to the strut of the instant invention. A bushing is an insulating liner that is positioned within an opening. In contrast, a strut is a structural element used to brace or strengthen a framework by resisting longitudinal compression. The bushing/liner of Forsyth et al. is, by definition, not the functional or structural equivalent of the strut of the instant invention. Nonetheless, the claims have been amended to further clarify that the struts of the instant invention intersect the outer conductor of the coaxial line. As shown in FIGS. 1 and 2, the struts of the instant invention are structural elements extending radially into the coaxial line. This is in contrast to the bushing **B** of Forsyth et al., which does not intersect the outer conductor, connecting axially to the terminal **T**.

In addition, the bushing of Forsyth et al. does not include a strut comprising a conduit in fluid communication with the inner conductor. It appears the Examiner's position is that either the insulating tube **45'** or the exit tube **45** of Forsyth et al. is equivalent to the conduit of the present invention. FIG. 4 of Forsyth et al. shows an insulating tube **45'** through which coolant exits. The insulating tube **45'** is connected to the *exterior* of the bushing **B** (i.e., the structural element asserted to be the equivalent of the strut) to permit the coolant to exit from the central superconductor **S1**. See col. 6, lines 34-48; col. 10, lines 9 – 14; and FIG. 4. In contrast, the conduit of the instant invention is a channel formed within the strut through which coolant flowing along the inner conductor may be supplied and removed. Consequently, the Forsyth et al. insulating tube **45'** connected to the bushing does not constitute a strut including conduit through which coolant flows as claimed in claim 1.

Forsyth et al. further shows a plastic tube **PP** including an exit **45** positioned just below the bushing **B**. See col. 6, lines 34 – 48; col. 10, lines 9 – 14; and FIG. 3. The plastic tube

AMENDMENT

U.S. PATENT APPLICATION NO. 10/814,131

RESPONSE TO OFFICE ACTION MAILED JUNE 6, 2005

spirals around the bushing **B**. In contrast, the conduit of the instant invention is channel that permits coolant the flow through the strut. Thus, the plastic tubing **PP** or its associated exit **45** is not the equivalent of the conduit as claimed in claim 1.

Claims 3 – 21 depend either directly or indirectly, from independent claim 1 and, therefore, include all the limitations of their parent claim. These dependent claims are considered to be in condition for allowance for substantially the same reasons discussed above in relation to their parent claim and for further limitations recited in the claims.

Claims 14 – 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Forsyth et al. in view of U.S. Patent No. 3,749,811 to Bogner et al. The Examiner takes the position that modifying the superconducting transmission line of Forsyth et al. by providing a plurality of sections that are separately coolable from one another, or by connecting the inner sections of the coaxial line with a complementary plug connection (both argued to be taught by Bogner et al.) would be obvious. This rejection is respectfully traversed. Initially, these claims depend, either directly or indirectly, from independent claim 1 and, therefore, include all the limitations of their corresponding parent claim. As discussed above, the Forsyth et al. reference does not disclose, teach, or suggest a coaxial line including a plurality of insulating material struts intersecting an outer conductor, wherein at least some of the struts include conduits through which coolant may flow into an inner conductor, as recited in the claims.

The Bogner et al. reference does not compensate for the deficiencies of the Forsyth et al. references and similarly does not disclose, teach, or suggest these features. In addition, one skilled in the art would not use the teachings of Bogner et al. to modify the terminals of the Forsyth et al. superconducting power system. The Forsyth et al. reference is directed to a system located at the *terminal end* of a superconducting cable to permit the extraction of a coolant from the cable. *See* col. 5, lines 19 – 57. Consequently, one skilled in the art would not be motivated to modify the Forsyth et al. termination system by connecting additional segments thereto—connecting additional segments to either the cable or the terminal would destroy the utility of the system. Furthermore, neither Forsyth et al. nor Bogner et al. disclose cable segments that can be cooled independent of one another. It is clear from the Bogner et al. reference that as one section

AMENDMENT

U.S. PATENT APPLICATION NO. 10/814,131

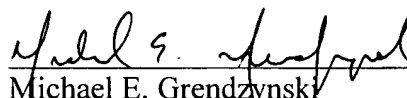
RESPONSE TO OFFICE ACTION MAILED JUNE 6, 2005

connects to an adjoining section, coolant emanating from a common source flows through each connected segment. *See* col. 5, lines 39 – 50. As such, the segments cannot be cooled independently. In contrast, each segment of coaxial line according to the instant invention includes struts operable to supply coolant to and remove coolant from the line, enabling segments that can be cooled independent of each other (e.g., by connecting each segment to its own coolant source).

A Supplemental IDS is attached to this communication listing DE 10108843 and US 3,946,141. It is requested the examiner acknowledge receipt of the IDS in a subsequent communication. None of these references disclose, teach, or suggest, independently or in combination, the features as claimed in independent claim 1.

In view of the foregoing, Applicants respectfully request the Examiner to find the application to be in condition for allowance with respect to claims 1 and 3 – 21. However, if for any reason the Examiner feels that the application is not now in condition for allowance, it is respectfully requested that the Examiner call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Respectfully submitted,



Michael E. Grendzynski
Registration No. 54,790

EDELL, SHAPIRO & FINNAN, LLC
1901 Research Boulevard, Suite 400
Rockville, Maryland 20850-3164
(301) 424-3640

Hand Delivered on: September 6, 2005